The Brown Pelican

The Newsletter of the Golden Triangle Audubon Society

Vol. 14 No. 10 October 2008

Membership Meeting
Thursday, October 16, 2008
7:00 PM
Garden Center, Tyrrell Park, Beaumont

Southeast Arizona
David Bradford

David is a past chair of the Ornithology Group of Houston, a past board member of the Houston Audubon Society, and is a former Executive Vice-President of the Outdoor Nature Club. He has also been a tour leader for Penfeathers Tours for several years, focusing on the trips to more distant locations in the United States.

We will plan on having the doors open by 6:00 p.m. and the program will start at 7:00 p.m. sharp.

Another Hurricane!!

Last month, we wrote under the heading "Exciting Times." We did not have two hurricane evacuations and one hurricane strike in mind! Elsewhere in this issue, Steve Mayes describes some of the effects on specific birding sites. Hurricanes are always a threat on the United States mainland from the northeast corner of Maine to the southern tip of Texas as has been demonstrated this hurricane season by Hurricanes Kyle and Dolly. The area took a hit from Rita in 2005. Rita was a strong Category 3 storm when it hit the coast near the mouth of the Sabine River, but most of our coastal birding areas were on the west side of the storm, and really not affected much by storm surge. Most of the damage was wind caused. This time, Ike was an enormous storm when it made landfall on Galveston Island. The winds were not as strong, but covered much more area. We were on the east side of the storm, and our coastal birding areas were completely battered and submerged in the massive storm surge. Ike was a Category 2 storm in its wind velocities, but it had the wind field and storm surge more like that to be expected from a Category 4 storm.

The salt water engulfed essentially all the land south of Highway 73 in Jefferson County, and many areas north of that near the major rivers and bayous. Most of that vegetation is not salt tolerant and was killed. The various wooded areas were inundated, killing all the underbrush. Only time will tell how many trees will survive. The underbrush will grow back in time. How fast all this happens depends on the amount of rainfall. The fresh water will flush out the salt, and the more rain the better from that perspective. But it will be 2010 before we see any real sense of normalcy in the habitat.

Nature is resilient, and will recover. If past events are any guide, what will not recover as quickly is the infrastructure that allows us to access the birding areas. We must press for access, accepting that it will be without some of the facilities that have been provided in the past. We do need the roads, and portable toilets are very helpful, but we need little else to be able to bird. Keeping facilities closed when simple access is practical will not be acceptable.

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Vol. 14, No.10 October. 2008

Golden Triangle Audubon Society

See Web Site for more information www.goldentriangleaudubon.org

The Brown Pelican is published monthly except July by the Golden Triangle Audubon Society, P. O. Box 1292, Nederland, Texas 77627-1292

Calendar of Events

Note that the events listed below are subject to reconfirmation in the aftermath of Hurricane Ike. Please Check the web site at www.goldentriangleaudubon.org for confirmation.

Thursday October 16. Membership Meeting. David Bradford. Southeast Arizona. See page 1.

Refreshments

Each month, we rely on volunteers to provide the refreshments at our membership meeting. **We need volunteers to bring all items for the October and November 2008 meetings.** Please do not wait until the last minute to volunteer! We do not expect one person to bring everything, but please call so we can coordinate! If you can just bring drinks and cookies or something similar, please call Jennifer Armacost at (409) 790-7222 (or email her at armacostj@yahoo.com) **as far in advance as possible**. Please help if you can!

Saturday October 18. Sabine Woods Work Day. We are tentatively planning a work day at Sabine Woods, if safety conditions permit. However, contact us or check our website before setting out for this work day. The woods were badly beaten by the storm surge from Hurricane Ike. The boardwalk was broken apart and scattered over the sanctuary. What we hope to be able to do is to remove the remains of the boardwalk, and clear the trails where they were previously located. Tools that we might need for this would include chainsaws, and probably small sledge-hammers to break apart the boardwalk sections. We might want to remove vegetative debris, and, if you have a wheelbarrow and shovel to put in your pick up truck, it is conceivable that this might be useful.

If anyone has expertise in repairing fences, we may be able to put it to good use. Most of the fence is barbed wire on metal posts, and we suspect that attachments of the wire to the posts have failed and need to be replaced.

We will plan to start around 7:30 a.m., and will probably work until noon or later.

Please bring heavy duty work gloves and insect repellant, and whatever hand tools you may have – loppers, clippers etc. We have a few, but typically not enough for everybody. Rakes may be useful this time. Bring water or other liquid refreshments.

Thursday November 20. Membership Meeting. Shirley and Sid Rucker on Hummingbirds.

Saturday November 22 – Field trip to West Jefferson County. Road and habitat conditions should make this field trip practical. This trip expects to find sparrows, raptors, Sandhill Cranes and more.

Christmas Counts

It is much too early to know what will happen to this year's counts. If access to substantial portions that are normally covered in some count circles is not possible, it may be better from a scientific standpoint not to distort the record with a non-representative count.

Subscription Renewal Reminder

Please check the mailing label on this issue. If the date on your label NOT prefixed by "AU" has passed, or there is no other date, please remit your contribution of $15 to Golden Triangle Audubon Society at P.O. Box 1292, Nederland, Texas 77627-1292. Although this contribution towards the cost of the *Brown Pelican* is voluntary for National Audubon Society members living in the official chapter territory, we will appreciate your support. Our official chapter territory is defined by zip codes, but is basically Jefferson, Hardin and Orange Counties and one or two localities close to those Counties.

Hurricane Ike

by Steve Mayes

On Saturday, September 13, Hurricane Ike roared through the upper Texas coast doing severe and widespread damage. Many people reading this know first hand the damage that was done to area homes and businesses but our local refuges and parks were also affected, some severely. This article is meant to update GTAS members on the current status (as much as we know) of our favorite area birding spots.

TOS Sabine Woods – The entire Sabine Pass area was heavily damaged by the storm surge from Ike. At Sabine Woods, the storm destroyed the boardwalk, the kiosk and the benches and picnic tables. Some trees were taken down including a least a couple of large oaks. The underbrush was largely destroyed and there is much debris scattered across the property. There may be damage to the fences and the water system as well but the extent is unknown at this time. The good news is that most of the trees are still upright. Saltwater has done a lot of damage and may kill additional trees. How many trees will ultimately survive the prolonged exposure to salt water will not be known until at least the spring. Live oaks are generally pretty resilient so hopes are high. In the meantime, until a clean up can be done and the possible dangers to birders can be assessed, the sanctuary is closed to all birding.

Sea Rim State Park/The Willows and McFaddin NWR – Sea Rim was still closed from Hurricane Rita and remains closed now. No first hand account is yet available from club members of the damage to the park but a few pictures on the Texas Parks and Wildlife Department website show nothing of any consequence is left. The pilings/shell (only) of the headquarters building are standing, but now more or less on the beach. The residences were essentially completely destroyed. The Willows may still be intact but will have damage from the surge and the very lengthy exposure to salt water as will the mulberries down Highway 87. Luckily, both these species are fairly salt tolerant and may bounce back. The boardwalks at Sea Rim, judging from the damage at Sabine Woods, are almost certainly all destroyed. All buildings and facilities at McFaddin National Wildlife Refuge are damaged but the extent is not clear at this time. The condition of Clam Lake Road is not known but is likely damaged and covered with debris. Currently, Highway 87 beyond Sabine Woods is closed, so Sea Rim and McFaddin National Wildlife Refuge are not even accessible. It is likely that, even when the highway reopens, these parks will remain closed for some time. It is unclear how long it will be before there is any beach access in Jefferson County for birders or others.

HAS and TOS High Island Sanctuaries – All these sanctuaries (Boy Scout Woods, Smith Oaks, Hooks Woods, etc) suffered extensive damage including downed trees and limbs but the tree damage may not be as severe as it was from Rita or from the tornados that came through High Island during Hurricane Humberto. There are additional trees down in the picnic area of Smith Oaks. There is extensive debris in Hooks Woods. Water did come into parts of these refuges and the marshes around High Island had significant salt water intrusion. There was a great deal of boardwalk damage at least at Boy Scout Woods. All these sanctuaries remain closed until clean ups can be done and risks assessed.

Tyrrell Park/Cattail Marsh – There was some tree damage in the park but, fortunately, no apparent problem with storm surge. The main part of the park is, to the best of our knowledge, open and accessible though trails in the wooded sections are likely blocked with fallen limbs and trees. The Garden Center building apparently suffered no serious damage so our meeting place is intact. Cattail Marsh remains closed to the public because of non-hurricane related repairs and this will likely be true for the foreseeable future.

Pleasure Island – There was a great deal of damage to the marina and to houses on the island. The levee roads appear to still be closed as of this writing due to damage and debris on the roads. The levee that is accessible from the park near the foot of the bridge is still accessible and suffered no damage though there is tree damage in the park. The causeway bridge to Louisiana remains closed at this time.

HAS Bolivar Flats Sanctuary – There is extensive damage to the vehicle barrier and a great deal of beach was lost to the surge. Exactly how much beach loss there is may not be known for some time until the new beach stabilizes. A lot of debris was piled into the marsh behind the flats. The observation tower was carried away by the surge. Obviously, with no trees, this refuge may have suffered less obvious damage than others in the area. However, due to the catastrophic damage to the Bolivar area and changes to the beach from the surge, access to the flats is currently difficult and probably not advisable.

Smith Point – The whole Anahuac/Smith Point area was severely damaged and is littered with a huge amount of debris from Bolivar and Galveston. In addition, there are many dead cattle in the area. The hawk watch tower is still there but is surrounded by debris and its structural soundness is unknown. Access to the area is currently restricted to residents and birding locations are closed. Travel to this area is not advised until significant cleanup can be done.

Anahuac National Wildlife Refuge – We have little first hand knowledge at this time but damage is likely significant. Damage to buildings and structures is not known in detail, but indications are they are all considered constructive total losses, and that much equipment was destroyed. There will likely be damage to boardwalks and significant salt water intrusion. The refuge is closed until further notice.

Peveto Woods and Sabine National Wildlife Refuge – Peveto Woods near Johnson's Bayou in Louisiana was hit hard again. Underbrush is mostly dead or gone. Some trees weakened by Rita were taken down by Ike. The remaining oaks and pecans seemed to weather the storm okay and hopes are high that the salt water will not damage them further.

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Bird Sightings – August 2008

Coverage: Jefferson, Orange, Hardin, Tyler, Jasper, Newton, Angelina, San Augustine and Sabine counties. Send Reports to: John Whittle, 3015 Nashville Avenue, Nederland, Texas 77627-6749 by the 10th of the month after or e-mail to john.whittle@lamar.edu or call (409) 880-8276. For "very rare" birds, please submit a brief account of your sighting, including a description of the bird (unless unmistakable), brief details of what it was doing, and where it was seen (if on publicly accessible property). Format: "Common" to "abundant" birds are shown in the fashion "JEF 4 reps(25)" which means four reports in Jefferson County totaling 25 birds. Less than "common", as JEF-SW 7/5(2) ABC", which means seen in Jefferson County (JEF) at Sabine Woods (SW) on the 5th of July, two (2) birds, reported by observer "ABC." The range of dates for which the species was reported is shown in parentheses in a column before the sighting details or report summaries.

Commentary: August is always one of our slowest months for reports, even though shorebird migration is in full swing during the month and passerine migration is quite active by the end of the month. The list of warblers this August was quite impressive, especially the early "push" on August 8th and 9th. However, accessible shorebird habitat in our area has been very limited. In the aftermath of Hurricane Ike, accessible birdable areas are going to be very, very restricted, and these columns are likely going to shrink dramatically

WHISTLING-DUCK, Black-bell.	(9-24)	JEF 3 reps(6)
DUCK, Mottled	(3-3)	JEF-PI 8/3(72) JAW
DUCK, Ruddy	(3-3)	JEF-PI 8/3(1) JAW
PELICAN, Brown	(3-3)	JEF-PI 8/3(2) JAW
CORMORANT, Neotropic	(3-24)	JEF 3 reps(174)
HERON, Great Blue	(9-23)	JEF 4 reps(11)
EGRET, Great	(3-25)	JEF 7 reps(22)
EGRET, Snowy	(3-25)	JEF 8 reps(96)
HERON, Little Blue	(16-24)	JEF 3 reps(93)
HERON, Tricolored	(3-24)	JEF 4 reps(15)
EGRET, Reddish	(3-3)	JEF 1 rep(1)
EGRET, Cattle	(3-24)	JEF 5 reps(332)
HERON, Green	(2-24)	JEF 4 reps(13)
NIGHT-HERON, Black-cr.	(3-23)	JEF 3 reps(5)
NIGHT-HERON, Yellow-cr.	(3-16)	JEF 2 reps(7)
IBIS, White	(3-23)	JEF 3 reps(91)
IBIS, White-faced	(24-24)	JEF 1 rep(1)
IBIS, Plegadis	(3-23)	JEF 3 reps(143)
SPOONBILL, Roseate	(3-9)	JEF-PI 8/3(90) JAW; JEF-SW 8/9(5) JAW
VULTURE, Black	(9-9)	JEF 1 rep(1)
VULTURE, Turkey	(1-10)	HAI 1 rep(1); JEF 3 reps(15)
VULTURE species	(23-23)	JEF 1 rep(10)
KITE, White-tailed	(3-24)	JEF 2 reps(2)
KITE, Mississippi	(1-26)	JEF-BMT 8/1(1) RHJ; JEF-BMT 8/9(1) RHJ; JEF-BMT 8/10(2) RHJ; JEF-BMT 8/26(1) RHJ
HAWK, Red-shouldered	(16-24)	JEF 6 reps(7)
HAWK, Broad-winged	(24-24)	JEF 8/24(1) JAW
HAWK, Swainson's	(10-10)	JEF 8/10(1) JAW
HAWK, White-tailed	(24-24)	JEF-TX87 8/24(1) JAW
CARACARA, Crested	(9-9)	JEF-TX87 8/9(1) HD
RAIL, Black	(15-15)	JEF-MCFW 8/15(3) MCF
RAIL, King	(17-17)	JEF 8/17(10) GD
PLOVER, Black-bellied	(3-3)	JEF 1 rep(80)
PLOVER, Semipalmated	(3-17)	JEF-PI 8/3(50) JAW; JEF 8/16(24) GD; JEF 8/17(24) GD
PLOVER, Piping	(3-3)	JEF-PI 8/3(1) JAW
KILLDEER	(3-24)	JEF 7 reps(14)
STILT, Black-necked	(3-24)	JEF 3 reps(87)
AVOCET, American	(3-3)	JEF-PI 8/3(250) JAW
SANDPIPER, Spotted	(3-3)	JEF 1 rep(1)
WILLET	(3-3)	JEF 1 rep(25)
TURNSTONE, Ruddy	(3-9)	JEF-PI 8/3(1) JAW; JEF-MCFW 8/9(1) JAW
KNOT, Red	(3-3)	JEF-PI 8/3(6) JAW
SANDERLING	(9-9)	JEF 1 rep(20)
SANDPIPER, Semipalmated	(3-3)	JEF-PI 8/3(4) JAW
SANDPIPER, Western	(3-17)	JEF 3 reps(270)
SANDPIPER, Least	(3-17)	JEF 3 reps(61)
SANDPIPER, Baird's	(3-3)	JEF-PI 8/3(16) JAW
SANDPIPER, Pectoral	(16-17)	JEF 2 reps(12)
GULL, Laughing	(3-24)	JEF 4 reps(123)
TERN, Least	(3-3)	JEF 1 rep(50)
TERN, Caspian	(3-3)	JEF 1 rep(1)
TERN, Black	(3-16)	JEF 4 reps(77)
TERN, Common	(3-3)	JEF-PI 8/3(2) JAW
TERN, Forster's	(3-9)	JEF 2 reps(94)
TERN, Royal	(3-3)	JEF 1 rep(6)
TERN, Sandwich	(3-3)	JEF 1 rep(4)
SKIMMER, Black	(3-3)	JEF 1 rep(25)
PIGEON, Rock	(3-24)	JEF 5 reps(39)
COLLARED-DOVE, Eurasian	(9-23)	JEF 4 reps(6)
DOVE, White-winged	(1-28)	JEF 26 reps(234)
DOVE, Mourning	(1-24)	HAI 1 rep(3); JEF 5 reps(68)
DOVE, Inca	(22-22)	JEF 1 rep(1)
CUCKOO, Yellow-billed	(9-9)	JEF 1 rep(1)
OWL, Barn	(24-24)	JEF-SW 8/24(1) JAW
NIGHTHAWK, Common	(3-24)	JEF 5 reps(16)
SWIFT, Chimney	(6-26)	JEF 5 reps(14)
HUMMINGBIRD, Ruby-thr.	(1-30)	JEF 35 reps(83)
HUMMINGBIRD species	(1-1)	JEF-BMT 8/1(1) RHJ
WOODPECKER, Red-headed	(1-4)	HAI-VCSP 8/1(4) JA; JEF-BMT 8/4(1) RHJ
WOODPECKER, Red-bellied	(1-3)	HAI 1 rep(12); JEF 1 rep(2)
WOODPECKER, Downy	(1-27)	HAI 1 rep(2); JEF 16 reps(16)
FLICKER, Northern	(3-3)	JEF-NEDR 8/3(1) JAW
WOODPECKER, Pileated	(1-18)	HAI 1 rep(2); JEF 5 reps(5)
WOOD-PEWEE, Eastern	(9-24)	JEF 2 reps(2)
FLYCATCHER, Yellow-bellied	(9-9)	JEF-SW 8/9(3) JAW
FLYCATCHER, Acadian	(1-8)	HAI 1 rep(1); JEF 1 rep(1)
FLYCATCHER, Traill's	(9-9)	JEF-SW 8/9(2) JAW
FLYCATCHER, Least	(9-9)	JEF-SW 8/9(1) JAW
EMPIDONAX species	(9-9)	JEF 3 reps(14)
FLYCATCHER, Gt. Crested	(8-20)	JEF-SW 8/8(1) JHH; JEF-SW 8/9(2) JAW; JEF-BMT 8/20(1) RHJ
KINGBIRD, Eastern	(9-24)	JEF 3 reps(57)
SHRIKE, Loggerhead	(3-24)	JEF 4 reps(14)
VIREO, White-eyed	(1-9)	HAI 1 rep(5); JEF 1 rep(1)
VIREO, Red-eyed	(1-9)	HAI 1 rep(6); JEF 1 rep(1)
JAY, Blue	(1-24)	HAI 1 rep(2); JEF 9 reps(22)
CROW, American	(1-1)	HAI 1 rep(1)
CROW, species	(3-24)	JEF 2 reps(7)
SWALLOW, Barn	(3-24)	JEF 3 reps(22)
CHICKADEE, Carolina	(1-5)	HAI 1 rep(10); JEF 2 reps(2)
NUTHATCH, Brown-headed	(1-1)	HAI-VCSP 8/1(1) JA
WREN, Carolina	(1-24)	HAI 1 rep(24); JEF 2 reps(2)
GNATCATCHER, Blue-gray	(1-27)	HAI 1 rep(1); JEF 4 reps(20)
BLUEBIRD, Eastern	(3-30)	JEF 3 reps(4)
ROBIN, American	(3-3)	JEF-NEDR 8/3(2) JAW
MOCKINGBIRD, Northern	(3-24)	JEF 6 reps(23)
THRASHER, Brown	(2-9)	JEF-NEDR 8/2(1) JAW; JEF-SW 8/9(1) JAW
STARLING, European	(9-24)	JEF 3 reps(25)

(continued on page 7)

A Short Guide to "Greener" Energy

1. The Major Issue – Climate Change

Increasing concentrations of "greenhouse" gases – gases which absorb the energy from energy sunlight reflected from the earth's surface rather than allowing it to be reflected back into space – increase the temperature of the earth surface and atmosphere. The most important greenhouse gas is carbon dioxide (CO_2), not so much because of its ability to absorb, which is relatively modest, but because of the large amount of it produced by the burning of fossil fuels – wood, coal, oil, and gas. The concentration of CO_2 in the atmosphere will soon have doubled from levels at the dawn of the industrial revolution. There are more potent greenhouse gases, such as methane, given off by ruminant animals (cows and sheep principally) and seeping from the ocean floor, but the atmospheric concentrations are an order or two of magnitude less than those of CO_2.

The increasing concentrations of CO_2 in the atmosphere is the primary factor in global warming. But there are uncertainties. CO_2 is slightly soluble in water and increasing concentrations in the atmosphere will, in time, result in more CO_2 dissolving in lakes and oceans. How fast this will happen is not clear. The mixing of water in the deep oceans with the surface water exposed to the atmosphere is a very slow process, possibly measured in decades. There are undoubtedly secondary effects of increasing CO_2 concentrations in water. Dissolved CO_2 increases the acidity of water, and this will inhibit the formation of calcium carbonate by shellfish and corals, and may even react with calcium carbonate already in the system in solid form.

Increasing concentrations of CO_2 may, or may not increase the amount of photosynthesis that occurs in green plants and in algae. The absorption of CO_2 will increase with increasing concentrations, but diffusion to the photosynthetic sites rather than absorption my be the rate limiting factor.

Climate change is a better descriptive term for the effects of what is, on the face of it, simply warming. The climate in many parts of the world is strongly dependent on large scale ocean currents. The best known is the moderation of the climate of the whole of maritime western Europe caused by the Gulf Stream. The Gulf Stream originates more or less around the periphery of the Gulf of Mexico, flows round the southern tip of Florida, then north parallel to the east coast of the United States and Canada to an area off Newfoundland and Labrador. There, as colder water from the north sinks. the warmer, less dense water flows nearer the surface and across the North Atlantic and fans out onto the west coasts of Europe. It is believed that there is a possibility that if the colder waters flowing south to the area off Labrador become less cold, they will no longer sink and the Gulf Stream might no longer flow across the North Atlantic. If that happens, western Europe will become much colder in winter, and perhaps much warmer in summer. Other currents around the world have been studied much less, but there will doubtless be effects on and from them.

One of the most obvious effects of increasing atmospheric temperatures will be the melting of ice in the polar ice caps an glaciers. Where the ice that melts is on land, as it is in Antarctica, and on the land areas of the Arctic such as Greenland and northern Canada, sea level will rise. Where the ice is on water, as it is in most of the rest of the Arctic, there will be no effect on sea level, as the ice that melts will occupy the same volume as the underwater portion of the current ice (in accordance with Archimedes principle).

2 – Conservation

With the recognition of the problems of carbon dioxide production came the recognition that cheap energy had, in the developed world, led to profligate use of it, and that much less could be used with relatively little impact on what is accomplished. Suffice it to say here that energy can be saved by increased efficiencies of all kinds, more careful planning, less waste, all of which will likely happen as the cost of energy increases. But the developing world will likely take up all the savings in the developed world and then more as their populations strive to share in the comforts and opportunities of modern society.

3 Current Fossil Fuel Energy Issues

Over the last 100 years or so, the world's population has become, and continues to become, increasingly dependent on energy. Prior to the industrial revolution, the only energy consumed external to humans and animals was heat produced almost exclusively by the burning of wood. Wood is a renewable source and consumption of it was probably relatively insignificant compared to naturally occurring forest and range fires.

The industrial revolution brought with it the use of first coal, then oil, both of which, although available in what were, for practical purposes, limitless quantities, produced carbon dioxide and many noxious pollutants. Over time, mostly in the second half of the last century, the noxious pollutants were reduced, but carbon dioxide production continued not only unabated, but in ever increasing quantities.

The supply of fossil fuels, especially oil and gas, has progressively proven to be less limited that appeared at first. However, quite suddenly it has become clear that the increasing carbon dioxide concentration that is significantly affecting global climate as discussed above is a more important issue than the supply of fossil fuel.

There are complex intertwined issues involved in energy use. Energy is produced and consumed in a number of different situations. Stationary production, such as electricity generation, offers many opportunities for efficiencies and mitigation of the pollution issues. Burning gas in what are called combined cycle plants, in which the burning takes place in what amounts to a jet engine with capture of both the

rotating energy of the engine and of the heat produced is a very efficient practical way of producing electricity. The capture and some form of fixation or storage of the carbon dioxide produced is still not economically viable, but the potential is there. However, electricity is very difficult to store efficiently, and thus difficult to use for most transportation uses, some rail systems not withstanding. Use of hybrid power systems in automobiles is, however, showing increasing promise, and providing some of the power from electricity generated other than in the automobile may become practical. Natural gas is potentially more plentiful than oil, and easier to use in a clean fashion, albeit with the production of carbon dioxide. Transport of liquefied gas involves technology which is maturing, although not risk free. The chemistry to convert oil or coal to gas is known, but not currently particularly efficient, and, in the case of coal, unlikely ever to be so. Despite the storage difficulties and the losses involved in transmitting electricity over long distances, electricity may well become the preferred source of energy for immediate application.

Land surface transportation may well evolve largely to electrical power, except in remote regions. However, marine and air transportation will likely prove to be very difficult to wean from liquid fuels.

4 Renewable and Alternate Energy Sources

In this section we will consider all energy sources that do not involve carbon dioxide production whether strictly "renewable" or not. Some of these are currently technologically mature enough to potentially contribute meaningfully to energy production. Very few, however, are able to compete economically on level terms with fossil fuels. Others are neither technologically or economical practical at present.

Nuclear Power. From an energy perspective, nuclear power has enormous potential, perhaps even more than did coal and oil at the beginning of the industrial resolution. However, the consequences of mishandling the technology are potentially exceptionally catastrophic and many are adamantly opposed to its use for that reason, and also because of the current unsatisfactory log term status of the waste issues. However, France has quite quietly and without significant public outcry increased its use of nuclear power to the point where nearly one-half of the country's electricity is produced in nuclear plants. Long term solutions to the nuclear waste issues will be found. Our sun consumes all matter contained within it in nuclear reactions and releases the energy as heat and light. Once rocket technology is extremely reliable and/or means to ensure containment of cargo in case of an accident is available, wastes can be sent to the sun. The economics of nuclear power are another matter. Current domestic nuclear plants are, in effect, massively subsidized. Whether standardization of plant design, being pursued at present, will both speed up the regulatory process and reduce construction and approval costs is not clear, but needs to be examined. While there are also issues associated with uranium mining and the other processes necessary to make nuclear fuel, it seems likely that the vast amounts of energy that can be produced in controlled nuclear reactions will have to be harnessed.

Wind Power. Wind power is very attractive because the wind is free. But above all else, wind turbines must not be located indiscriminately, and proposed sites must undergo rigorous environmental evaluation. Many will not be acceptable. Wind turbines are a grave threat to birds and bats. Therefore, turbines must not be located in bird migratory corridors, nor routes used by birds transiting from roosting areas to feeding area, nor in water where seabirds fly. The electric power generated by the turbines has to be transmitted to where it will be used. Above ground transmission lines involve additional hazards to birds.

While the wind is free, and reliable in many areas, but variable in others. In many parts of the southern United States, where air conditioning is a major factor in power demand, the wind is light when power is most needed. While power can be transmitted over long distances from where wind is available to where power is needed, much is lost in the process. But because of the relative maturity of the technology, wind power will likely play at least an interim role in addressing the climate change issues.

Solar. Solar energy can be divided into two distinct modes. The simplest, but not the most used, involves mirrors to focus the rays of the sun onto a small area. Typically, water is heated and used to drive turbines. The arrangement requires quite large areas for the mirrors and is therefore suited only to areas where landed with no higher use is available, typically in desert areas.

Most references to solar power are to photovoltaic cells wherein the suns rays are converted directly to electricity. The technology is maturing, the materials costs are coming down, albeit much more slowly than many had hoped, and small uses are now commonplace in many parts of the country. This form of solar power offers much promise. Panels of cells can be sited on otherwise unused surfaces such as roofs. In most of the country, the sun is available and its rays most intense when power is needed most. Some issues associated with the materials in the cells exist, but solar power has few environmental concerns.

Geothermal. Energy from geothermal sources will always be a niche source. Areas where hot water is available are restricted and not always in locations convenient for transmission or use. Geothermal sources are usually "dirty" in that they are associated with copious quantities of sulfur containing compounds. These typically have obnoxious odors and significant toxicity and corrosivity, and some greenhouse gas potential.

Tide and Wave Action. In a very few locations, a tidal bore is an everyday, usually twice a day phenomenon, potentially able to be captured for use. Of more widespread potential availability is the energy of wave action. While wave height is dependent on wind, and thus the same considerations as wind power, there are many coastal locations where, if no other weather process is under way, an onshore breeze develops during the day as the land warms up faster than the water. While there is a massive amount of energy involved, it is not

at all concentrated, and harnessing wave action is not easy, and is not attracting much attention at present.

Biofuels. Potentially one of the most controversial of alternate energy sources, biofuel refers to the production of liquid fuels from "biomass' – plant material. The most talked about process involves the production of alcohol from corn. However, corn is a foodstuff and use of it for fuel reduces the world's food supply. Nor is it clear that the "energy balance is favorable. Growing corn, as practiced in the United States, consumes significant amounts of fuel to power the tractors, and to produce the water and fertilizer that are used. If the biomass used is a byproduct, as in the waste from sugar cane production in Brazil, or is biomass grown and harvested with minimal energy consumption, the energy balance is certainly more positive. Whether biofuels will every be practical on a large scale is an open question. Politics has reared its ugly head, and farming interest and farm subsidies are just beneath the surface of the discussions. Distortions in grain prices to meet government mandated alcohol use are troubling.

Fuel Cells. Fuel cells are devices that produce water from hydrogen and oxygen with the energy released being captured directly as electrical current. Fuel cells are "clean" technology, no by products, no pollution, essentially no greenhouse gases (although water vapor is a greenhouse gas). The space program has made extensive use of fuel cells and the technology is fairly mature. But handling hydrogen is fraught with dangers and it is difficult to envisage routine use of fuel cells in everyday applications. Hydrogen and oxygen are best produced by the electrolysis of water, which requires consumption of electrical energy.

Hurricane Ike *(continued from page 3)*

Sabine NWR again suffered significant damage with the loss of many structures.

Big Thicket National Preserve – Although there is a great deal of tree fall/damage throughout east Texas, many of the units of the Big Thicket are reopening including the Turkey Creek Unit.

Orange County – We have little in the way of on the ground reports but, with such extensive damage in Orange County, areas like Claiborne-West Park and (especially) the Nelda Stark Unit (Bessie Heights) probably suffered extensive damage and may not be accessible.

It may be more difficult to find birding locations this fall and winter but time will heal most of the wounds to our natural areas and they will eventually be "birdable" again. Until clean ups and repairs can be done, please be patient and obey any "closed" signs. Our favorite spots will be back open just as soon as they can be!
[We have added a few updates to Steve's original article – Ed]

Bird Sightings *(continued from page 4*

WARBLER, Yellow	(9-24)	JEF-SW 8/9(4) JAW; JEF 8/16(1) RHJ; JEF-TP 8/16(2) GD; JEF-SW 8/24(1) JAW
WARBLER, Black-thr. Green	(9-16)	JEF-SW 8/9(1) JAW; JEF 8/16(1) RHJ
WARBLER, Yellow-throated	(8-16)	JEF-SW 8/8(1) JHH; JEF-SW 8/9(1) JAW; JEF-TP 8/16(1) GD
WARBLER, Pine	(1-16)	HAI 1 rep(2); JEF 2 reps(6)
WARBLER, Prairie	(8-8)	JEF-SW 8/8(1) JHH
WARBLER, Black-and-white	(8-16)	JEF 4 reps(11)
REDSTART, American	(8-9)	JEF-SW 8/8(2) JHH; JEF-SW 8/9(2) JAW
WARBLER, Prothonotary	(8-16)	JEF 4 reps(9)
WATERTHRUSH, Louisiana	(9-9)	JEF-SW 8/9(1) JAW
WARBLER, Kentucky	(8-9)	JEF 2 reps(5)
YELLOWTHROAT, Common	(3-9)	JEF 3 reps(12)
WARBLER, Hooded	(8-16)	JEF 4 reps(15)
WARBLER, Canada	(9-9)	JEF-SW 8/9(1) JAW
TANAGER, Summer	(1-1)	HAI 1 rep(1)
CARDINAL, Northern	(1-5)	HAI 1 rep(4); JEF 2 reps(4)
GROSBEAK, Blue	(24-24)	JEF-TX87 8/24(5) JAW
BUNTING, Indigo	(1-1)	HAI-VCSP 8/1(4) JA
BLACKBIRD, Red-winged	(3-24)	JEF 4 reps(54)
MEADOWLARK, Eastern	(9-9)	JEF 1 rep(1)
MEADOWLARK species	(10-10)	JEF 1 rep(1)
GRACKLE, Common	(3-8)	JEF 2 reps(12)
GRACKLE, Boat-tailed	(9-24)	JEF 2 reps(44)
GRACKLE, Great-tailed	(1-24)	JEF 6 reps(116)
GRACKLE, Gt./Boat tailed	(9-24)	JEF 2 reps(11)
COWBIRD, Brown-headed	(23-23)	JEF 1 rep(250)
ORIOLE, Orchard	(9-16)	JEF 2 reps(25)
FINCH, House	(1-25)	JEF-NEDR 8/1(1) JAW; JEF-BMT 8/6(1) RHJ; JEF-BMT 8/17(1) RHJ; JEF-BMT 8/25(1) RHJ
SPARROW, House	(1-9)	JEF 4 reps(40)
Number of Species		119
Number of Individuals		4644

County Abbreviations:
HAI — Hardin; JEF — Jefferson

Location Codes:
BMT — Beaumont; MCFW — McFaddin NWR; NEDR — Nederland; PI — Pleasure Island, Port Arthur; SRSP — Sea Rim State Park; SW — Sabine Woods; TP — Tyrrell Park incl. Cattail Marsh; TX87 — Texas 87 Pt. Arthur-Sabine Pass-Sea Rim SP; VCSP — Village Creek State Park

Observer Abbreviations
FTBF — Field Trip to Bolivar Flats; GD — Gerald Duhon; HD — Howard Davis; JA — Jim Armacost; JAW — John Whittle; JHH — John H. Haynes; MCF — McFaddin and Texas Pt NWRs (Patrick Walther); RHJ — Rose Ann and Harrison Jordan

Disruptions Resulting from Ike

In addition to losing our September meeting and field trip, we will probably not be able to do "business as usual" in the next few months. Doubtless, it will be a long time before we have access to the beach anywhere nearby. A significant proportion of our group activities in past years have involved coastal locations. On the immediate coast, the dunes were destroyed, but the beaches are already in the process of smoothing out all the gullies that Ike formed. But access routes will not restore themselves. We will need to look to inland destinations for our field trips. Fortunately, our traditional November, January and February destinations are inland, essentially undamaged, and accessible.

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RARE BIRD ALERTS

Unfortunately, almost all the local and regional telephone Rare Bird Alerts have been discontinued in favor of various Internet based means of distribution.

The Texas-wide Rare Bird Alert, maintained by Houston Audubon Society, is available on their web-site at **http://www.houstonaudubon.org/** Email alerts are also available for a small fee. Most rare bird sightings in Texas are posted on the TEXBIRDS listserv. The archives of this listserv are at **http://listserv.uh.edu/archives/texbirds.html** It is not necessary to subscribe to the listserv to view the archives, which include postings up to the most recent..

Transcriptions of many current and recent email alerts are available on the Siler's Birding on the Net at **http://birdingonthe.net/hotmail.html** Detailed information (maps and text) on birding sites on the Upper Texas Coast is also available on the Web at **http://www.texasbirding.net**..

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